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Yellow fever in Rio de Janeiro, Brazil, compiled from the annual report of the department of health of the Federal district for the year 1905.

Since January 1, 1877, yellow fever has caused 35,279 deaths. These deaths occurred as follows: From 1877 to 1890 there were 11,808 deaths from yellow fever; from this date until 1903, 22,506 deaths; in 1903, 584 deaths; in 1904, 48 deaths; in 1905, 289 deaths; in 1906, 43 deaths, and from January 1 to February 22, 1907, there has been but 1 death due to yellow fever in the city.

Prior to the year 1890 there was little or no attempt at disinfection of premises of patients ill or dead of yellow fever. At that time cases of yellow fever occurring in private practice were not reported.

During the first period of thirteen years yellow-fever deaths occurred in this city as follows:

1877.....	282
1878.....	1, 176
1879.....	974
1880.....	1, 625
1881.....	257
1882.....	89
1883.....	1, 608
1884.....	863
1885.....	445
1886.....	1, 449
1887.....	137
1888.....	747
1889.....	2, 156
Total (period of 13 years).....	11, 808

Late in the year 1889 the recent theories in regard to disinfection of all places, houses, hospitals, etc., and of bedding, clothing, etc., with which the patient could possibly or presumably have been in contact, were put in practice in this city, and during the following thirteen years were carried out with the utmost care. This disinfection was not as thorough as could have been desired. Under the laws regarding the reporting of yellow fever there were many cases in which disinfection could not be applied. Deaths have always been more or less accurately reported in Rio de Janeiro, and it is probable that a majority of the localities infected by fatal cases of yellow fever were disinfected during the thirteen years under discussion, but the localities where nonfatal cases occurred were often not reported, and little could be done in such instances.

Great results were looked for from the practice of disinfection. These results were not all that could be expected, the disinfection being often misdirected, and only such as was more or less effective in killing mosquitoes being of any possible benefit.

The following statement of mortality from yellow fever covers the period from 1890 to 1902, inclusive, when disinfection of premises, etc., was in force:

1890.....	719
1891.....	4, 456
1892.....	4, 312
1893.....	825
1894.....	4, 852
1895.....	818

1896.....	2, 929
1897.....	159
1898.....	1, 078
1899.....	731
1900.....	344
1901.....	299
1902.....	984
Total (for 13 years).....	22, 506

In this connection one fact must not be lost sight of, and that is, from the year 1877 to 1902, the increase in the population of the city, which almost doubled itself in that period of twenty-six years. During this second period of thirteen years there was also a great amelioration in the sanitary condition of the city, especially during the last ten years of the period, including proper disposal of sewage, new sewerage piping, increase of the area of sewerage, great improvements in the housing of the poorer classes and also in the homes of the middle, and, indeed, of all classes, and increase in the water supply, which is and always has been excellent. The sanitary condition of the city was much better during the last ten years of the second period than in the first period of thirteen years, from 1877 to 1890. Add to this improvement the disinfection of yellow-fever infected places and it might have been expected to find fewer deaths from yellow fever, but this is not the case. During the second period there were four very severe epidemics and the mortality was appalling. Disinfection was as utterly inefficient as it has always proved itself to be when it has not, either accidentally or intentionally, been directed solely at the destruction of the mosquito.

The infection during the epidemics of 1891, 1892, and 1894 must have been very widespread, since we may at least estimate that the total number of deaths is about 33 per cent of the cases. This would give in the three years almost 40,000 cases of yellow fever in a city which did not at that date exceed 450,000 population.

After the year 1902 conditions improved. A thorough mosquito campaign was organized, and this revolutionized the yellow-fever work of the department. One thing was made compulsory, and to this end a new law was passed. This law required that every case of yellow fever be reported. A very heavy fine was the penalty. This fine has often been imposed, the alternative being imprisonment. The antimosquito work has included fumigation with pyrethrum or sulphur, the screening of all water containers, the destruction of larvæ by any practicable means, the prevention of any stagnant water where breeding places might be formed, etc. The antimosquito brigade is organized on the same plan as all successful brigades.

The results of the new organization have been as follows: First year, 1903, the year of organization, 1,118 cases of yellow fever and 584 deaths. The greater portion of the cases and deaths occurred in the first four months of the year. Second year, when the results of the new organization might reasonably be expected to be apparent (1904), 118 cases and 48 deaths. In no month of the year were there more than 10 deaths, and this number occurred only once. In the third year, when still better results should have been expected (1905), there were 608 cases and 289 deaths. This was a blow to the mosquito work. The recrudescence was due to the reporting of many cases of yellow

fever as bubonic plague by physicians, for which reason there was no mosquito work done on the premises or in the neighborhood.

Where mosquito work was stopped, or rather not done, because no need was reported for it, yellow fever spread very rapidly, and it was not for some time that the real nature of the disease was appreciated. A glance at the following table will show that the greater number of cases this year occurred in the months of April, May, and June, whereas in almost all epidemics of yellow fever here the fever is almost always at its height in February, and toward the end of April has greatly declined.

During the following year, 1906, there were 77 cases and 43 deaths, a mortality of over 50 per cent, and during the present year there have been 2 cases and 1 death from yellow fever from January 1 to February 22, 1907.

During the years 1903, 1904, 1905, 1906, and 1907 the cases and deaths occurred by months as follows:

Table of mortality from yellow fever, 1903 to February 17, 1907.

Month.	1903.		1904.		1905.		1906.		1907.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January.....	249	133	15	2	16	3	17	6	0	0
February.....	268	142	19	7	34	13	13	9	2	1
March.....	305	151	18	7	48	23	17	6	...	...
April.....	188	99	12	8	107	59	12	8	...	...
May.....	44	24	18	10	163	64	2	2	...	...
June.....	21	10	11	4	113	61	1	1	...	...
July.....	16	9	12	4	57	26	4	2	...	...
August.....	8	4	1	1	21	9	1	1	...	...
September.....	7	4	6	1	7	6	1	1	...	...
October.....	6	2	0	0	10	5	3	3	...	...
November.....	2	2	4	3	13	8	2	1	...	...
December.....	4	4	2	1	19	12	4	3	...	...
Total.....	1,118	584	118	48	608	289	77	43	2	1

These figures certainly prove the work of elimination of the fever from Rio de Janeiro in the space of four and a half years after the inception of the work. There is the same large reduction within a few months after the inception of the work, both in 1903 and 1904, and again in 1905, after its reestablishment. The yellow-fever season of 1906-7, which comprises the months of December, January, and March, has passed with 4 cases and 3 deaths in December, no cases nor deaths in January, and 2 cases and 1 death in February. As long as there are infected cities to the north and south of Rio de Janeiro the health authorities of which do not employ accepted measures for the elimination of yellow fever, there is danger of the reintroduction of yellow fever into this city unless the requirements here, as regards vessels coming from such ports, are very stringently maintained.

The present health department of the federal capital is efficient, and excellent in every respect.